(col. 4, lines 1-9), and Chartier et al., U.S. Patent No. 5,502,737 (col. 2, lines 49-54), all of which are of record in this Application (see the signed-off Information Disclosure Statement (IDS) accompanying the Official Action mailed April 9, 2002). Each of these prior art references discloses the complete structure of a conventional laser cavity. Since the structure of a conventional laser cavity is well-known to those skilled in the art, Applicants respectfully submit that the § 112 rejection of claims 17-28 is in error.

Turning now to the art rejections, and considering first the rejection of claims 17-20, 22, 23, and 25-32 under 35 USC § 102, Molva et al. fails to teach the requirement that the YAG layer and the monocrystalline layer of saturated absorbent material made of doped YAG are both in the [100] orientation. Molva et al. does not disclose an orientation for the crystals of the YAG layer, and at the time Molva et al. was filed, one skilled in the art would have understood the orientation of the YAG layer to have been [111], which is the normal growth axis of garnets and can optimize laser efficiency. Therefore, Molva et al. does not teach the inventive features of the instant Application, and the rejection of claims 17 and 31, and all claims dependent therefrom, under 35 USC § 102 is in error.

Turning now to the rejection of dependent claims 21 and 24 as obvious over Molva et al., these claims are respectfully resubmitted for examination as patentable over Molva et al. for the reasons set forth hereinabove regarding claim 17, as well as for their own additional limitations.

Having dealt with all the objections raised by the Examiner, the Application is believed to be in order for allowance.

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In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account No. 08-1391.

Respectfully submitted,

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CERTIFICATE OF MAILING

I certify that this correspondence is being deposited with the United States Postal Service as First Class mail in an envelope addressed to "Assistant Commissioner for Patents, Washington, D.C. 20231 on July 9, 2002 at Tucson, Arizona.

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MARKED COPY OF AMENDED CLAIMS

SERIAL NO. 09/582,256

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MARKED CLAIMS SHOWING CHANGES MADE:

17. (Amended) A [L]laser cavity [with controlled polarization containing] comprising:

a substrate made of a doped or undoped active laser material $Y_3A1_5O_{12}$ (YAG) on which a monocrystalline layer of saturable absorbent material made of doped YAG is deposited directly by liquid phase epitaxy [or by a similar process], in which [the] said active laser material has a [100] orientation, and [the] said monocrystalline layer of saturable absorbent material is deposited with the same [100] orientation[.];

wherein said doped or undoped active laser material YAG, said monocrystalline layer of saturable absorbent material made of doped YAG deposited directly on said active laser material by liquid phase epitaxy, and the specific [100] orientation of both said active laser material and the said monocrystalline layer achieves controlled polarization of the laser cavity.

18. (Amended) A [L]laser cavity according to claim 17, in which [the] said monocrystalline layer of doped saturable absorbent material is [obtained] deposited by liquid phase epitaxy (LPE).

19. (Amended) A laser [C]cavity according to claim 17, in which the substrate is a YAG active laser material, doped by one or several doping ion(s) that confer active laser material properties on it. [, and for example chosen among the Nd ion, Cr ion, Er ion, Yb ion, Ho ion, Tm ion, and Ce ion[s].]

20. (Amended) A laser [C]cavity according to claim 19, in which [the] at least one said doping ion is [neodymium (Nd)] selected from the group consisting of: Nd, Cr, Er, Yb, Ho, Tm and Ce.

21. (Amended) A laser [C]cavity according to claim 19, in which the proportion of the doping ion(s) is 0.1 to 10 moles % for each ion.

22. (Amended) A [L]laser cavity according to claim 17, in which the monocrystalline layer of a saturable absorbent material is a YAG doped with one or several doping ions [chosen among] selected from the group consisting of Chromium (Cr) ion, Erbium (Er) ion, Thulium (Tm) ion, and Holmium (H[O]o) ion[s].

23. (Amended) A laser [C]cavity according to claim 22, in which [the] said doping ion is Chromium ion.

24. (Amended) A laser [C]cavity according to claim 22, in which the proportion of the doping ion(s) is 1 to 10 moles % for each doping ion.

25. (Amended) A laser [C]cavity according to claim 17, in which the layer and/or the substrate are [(also)] doped with at least [one (other)] a second doping agent or substitute in order to modify their structural and/or optical properties.

26. (Amended) A laser [C]cavity according to claim 25, in which [the] said [(other)] second doping ion is [chosen among] selected from the group consisting of gallium ion and an inactive rare earth[s] ion.

27. (Amended) A laser [C]cavity according to claim 17, in which the thickness of the monocrystalline layer of saturable absorbent material is between 1 and 500 μm.

28. (Amended) A laser [C]cavity according to claim 17, in which the said monocrystalline layer of saturable absorbent material is a thin layer with a thickness of between 1 and 150 μm.

29. (Amended) A laser [C]cavity according to claim 17, which also comprises an entry mirror and an exit mirror, [the] said entry mirror being directly deposited on the substrate made of a saturable absorbent material.

30. (Amended) A laser [C]cavity according to claim 29, in which the exit mirror is directly deposited on the monocrystalline layer made of a saturable absorbent material.

31. (Amended) A [P]process for the collective production of triggered microlaser cavities [with controlled polarization] comprising the [following] steps of:

[-] supplying a substrate made of a doped or undoped $Y_3Al_5O_{12}$ (YAG) active laser material with a [100] orientation [is supplied] in the shape of a sheet with parallel faces polished on its two faces;

[-] depositing a monocrystalline layer of doped YAG saturable absorbent material [is deposited] on one of the faces of the said $Y_3Al_5O_{12}$ (YAG) active laser material, by liquid phase epitaxy [or by a similar process];

[-] polishing the saturable absorbent monocrystalline layer thus deposited [is polished];

[-] depositing [the] entry and exit mirrors [are deposited] on the two polished faces of the cavity; and

[-] cutting out the substrate - monocrystalline layer - mirrors complex thus obtained [is cut out];

wherein said doped or undoped active laser material YAG, said monocrystalline layer of saturable absorbent material made of doped YAG deposited directly on said active laser material by liquid phase epitaxy, and the specific [100]

orientation of both said active laser material and the said monocrystalline layer achieves controlled polarization of the laser cavity.

32. (Amended) A [T]triggered laser with controlled polarization comprising a cavity [like the cavity] according to claim 17, and pumping means for this cavity.